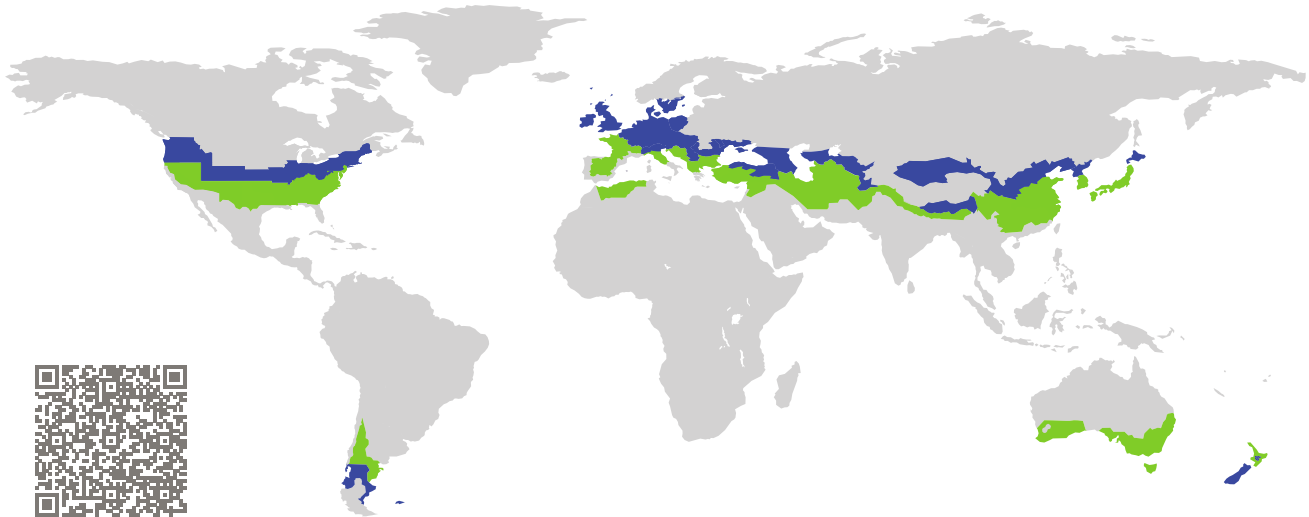


# CERTIFICATE

Certified Passive House Component

Component-ID 2185cw03 valid until 31st December 2025

Passive House Institute  
Dr. Wolfgang Feist  
64283 Darmstadt  
Germany

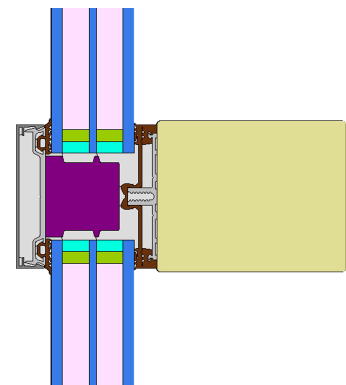


Category: **Curtain Wall**  
Manufacturer: **RAICO Bautechnik GmbH,  
Pfaffenhausen,  
Germany**  
Product name: **THERM+ 76 H-V**

**This certificate was awarded based on the following  
criteria for the cool, temperate climate zone**

Comfort  $U_{CW} = 0.80 \leq 0.80 \text{ W}/(\text{m}^2 \text{ K})$   
 $U_{CW, \text{installed}} \leq 0.85 \text{ W}/(\text{m}^2 \text{ K})$   
with  $U_g = 0.70 \text{ W}/(\text{m}^2 \text{ K})$

Hygiene  $f_{Rsi=0.25} \geq 0.70$



cool, temperate climate



**CERTIFIED  
COMPONENT**

Passive House Institute

Passive House  
efficiency class

phE

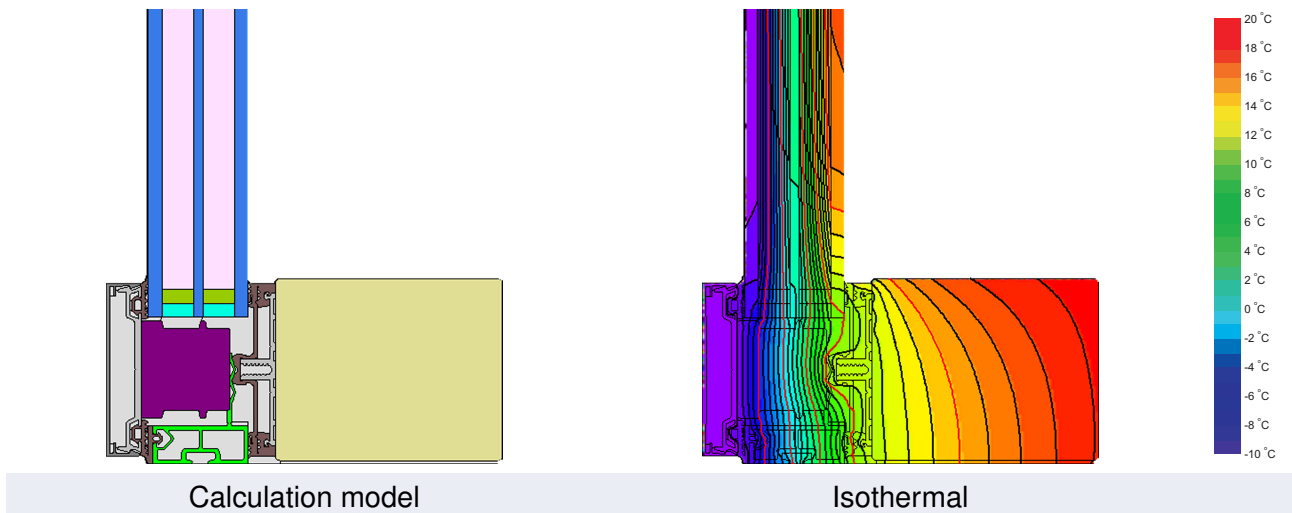
phD

phC

phB

phA

[www.passivehouse.com](http://www.passivehouse.com)



**Description**

Timber construction, Aluminium covering- and pressure-strip. PE-foam insulator in the glazing rebate. Plastic glass-carrier on stainless steel screws. The losses by the screws have been determined through measurement (ift), the losses caused by the glass support through FEM 3D-simulation (PHI). Pane thickness: 44 mm (6/14/4/14/6), rebate depth: 16 mm.

**Explanation**






The element U-values were calculated for the test element size of 1.20 m × 2.50 m with  $U_g = 0.70 \text{ W}/(\text{m}^2 \text{ K})$ . If a higher quality glazing is used, the element U-values will improve as follows:

Glazing	$U_g =$	0.70	0.69	0.58	0.53	$\text{W}/(\text{m}^2 \text{ K})$
		↓	↓	↓	↓	
Element	$U_{CW}$	0.80	0.79	0.69	0.65	$\text{W}/(\text{m}^2 \text{ K})$

Transparent building components are sorted into efficiency classes depending on the heat losses through the opaque part. The frame U-Values, frame widths, thermal bridges at the glazing edge and the glazing edge lengths are included in these heat losses. A more detailed report of the calculations performed in the context of certification is available from the manufacturer.

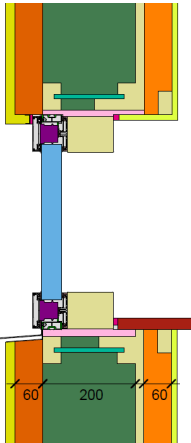
The Passive House Institute has defined international component criteria for seven climate zones. In principle, components that have been certified for climate zones with higher thermal requirements may also be used in climates with less stringent requirements. In a particular climate zone it may make sense to use a component of a higher thermal quality which has been certified for a climate zone with more stringent requirements.

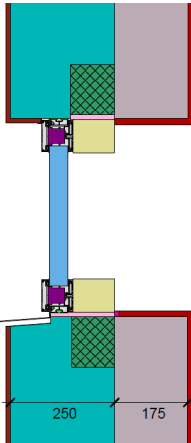
Further information relating to certification can be found on [www.passivehouse.com](http://www.passivehouse.com) and [passipedia.org](http://passipedia.org).

Frame values			Frame width $b_f$ mm	$U$ -value frame $U_f^1$ W/(m <sup>2</sup> K)	$\Psi$ -glazing edge $\Psi_g$ W/(m K)	Temp. Factor $f_{Rsi=0.25}$ [-]
Mullion fixed	(0M1)		76	0.89	0.035	0.78
Transom fixed	(0T1)		76	0.88	0.035	0.78
Bottom fixed	(FB1)		80	0.98	0.032	0.68
Top fixed	(FH1)		80	0.98	0.032	0.68
Lateral fixed	(FJ1)		80	1.00	0.032	0.72
			Spacer: SWISSPACER ULTIMATE		Secondary seal: Butyl	

Thermal glass carrier bridge<sup>2</sup>  $\chi_{GT} = 0.004$  W/K

### Validated installations

Lightweight timber (fixed glazed)	
$U_{Wall} = 0.13$ W/(m <sup>2</sup> K)	
	
$\Psi_{install}$	W/(m K)
Top	0.019
Left	0.017
Right	0.017
Bottom	0.026
$U_{W,installed} = 0.84$ W/(m <sup>2</sup> K)	

Exterior insulation and finishing system (EIFS) (fixed glazed)	
$U_{Wall} = 0.13$ W/(m <sup>2</sup> K)	
	
$\Psi_{install}$	W/(m K)
Top	0.008
Left	0.006
Right	0.006
Bottom	0.017
$U_{W,installed} = 0.83$ W/(m <sup>2</sup> K)	

<sup>1</sup> Includes  $\Delta U = 0.18$  W/(m<sup>2</sup> K). Determined through measurement

<sup>2</sup> Determined through 3D FEM simulation. Glass carrier type: Non-metallic glass carrier with screws

